



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant: Alexander A. Maltsev et al.

**SYSTEM AND METHOD FOR SELECTING DATA RATES TO PROVIDE UNIFORM BIT LOADING OF SUBCARRIERS OF A MULTICARRIER COMMUNICATION CHANNEL**

Docket No.: 884.B55US1  
Filed: March 30, 2004  
Examiner: Unknown

Serial No.: 10/815,035  
Due Date: N/A  
Group Art Unit: 2631

**Mail Stop Amendment**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

We are transmitting herewith the following attached items (as indicated with an "X"):

- ☒ A return postcard.
- ☒ A Communication Concerning Related Applications (2 pgs.).
- ☒ An Information Disclosure Statement (2 pgs.), Form 1449 (2 pgs.), and copies of 23 cited documents.

If not provided for in a separate paper filed herewith, Please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
Customer Number 21186

By: *Ann M. McCrackin*  
Atty: Ann M. McCrackin  
Reg. No. 42,858

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 17<sup>th</sup> day of March, 2006.

*JAMES KANYUSIK*  
Name

*James Kanyusik*  
Signature

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
(GENERAL)



S/10/815,035

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Alexander A. Maltsev et al.	Examiner:	Unknown
Serial No.:	10/815,035	Group Art Unit:	2631
Filed:	March 30, 2004	Docket:	884.B55US1
Title:	SYSTEM AND METHOD FOR SELECTING DATA RATES TO PROVIDE UNIFORM BIT LOADING OF SUBCARRIERS OF A MULTICARRIER COMMUNICATION CHANNEL		
Assignee:	Intel Corporation	Customer No.:	21186

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COMMUNICATION CONCERNING RELATED APPLICATION(S)

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Applicants would like to bring to the Examiner's attention the following related application(s) in the above-identified patent application:

<u>Serial/Patent No.</u>	<u>Filing Date</u>	<u>Attorney Docket</u>	<u>Title</u>
10/749,903	December 29, 2003	884.B53US1	MULTICHANNEL ORTHOGONAL FREQUENCY DIVISION MULTIPLEXED RECEIVERS WITH ANTENNA SELECTION AND MAXIMUM-RATIO COMBINING AND ASSOCIATED METHODS
10/789,387	February 26, 2004	Intel P16330	AN APPARATUS AND ASSOCIATED METHODS TO INTRODUCE DIVERSITY IN A MULTICARRIER CHANNEL
60/536,071	January 12, 2004	Intel P18618Z	A SYSTEM APPARATUS AND ASSOCIATED METHODS FOR HIGH THROUGHPUT WIRELESS NETWORKING
10/862,535	June 7, 2004	884.C80US1	MULTICARRIER COMMUNICATION SYSTEM AND METHODS FOR LINK ADAPTATION USING UNIFORM BIT LOADING AND SUBCARRIER PUNCTURING

COMMUNICATION CONCERNING RELATED APPLICATIONS

Serial Number: 10/815,035

Filing Date: March 30, 2004

Title: SYSTEM AND METHOD FOR SELECTING DATA RATES TO PROVIDE UNIFORM BIT LOADING OF SUBCARRIERS OF A MULTICARRIER COMMUNICATION CHANNEL

Assignee: Intel Corporation

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Dkt: 884.B55US1 (INTEL)

Respectfully submitted,

ALEXANDER A. MALTSEV ET AL.

By Applicants' Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

Attorneys for Intel Corporation

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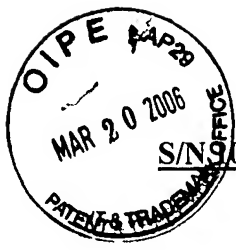
(612) 349-9592

Date March 15, 2006 By Ann M. McCrackin  
Ann M. McCrackin  
Reg. No. 42,858

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JAMES KANYSIK  
Name

Roman Koupal  
Signature



S/N 10/815,035

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant:	Alexander Alexandrovich Maltsev et al.	Examiner:	Unknown
Serial No.:	10/815,035	Group Art Unit:	2631
Filed:	March 30, 2004	Docket:	884.B55US1
Title:	SYSTEM AND METHOD FOR SELECTING DATA RATES TO PROVIDE UNIFORM BIT LOADING OF SUBCARRIERS OF A MULTICARRIER COMMUNICATION CHANNEL		
Assignee:	Intel Corporation	Customer Number:	21186

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**INFORMATION DISCLOSURE STATEMENT**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully requests that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicant requests that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicant with the next official communication.

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Information Disclosure Statement considered.

## INFORMATION DISCLOSURE STATEMENT

Customer No.: 21186

Serial No.: 10/815,035

Filing Date: March 30, 2004

Title: SYSTEM AND METHOD FOR SELECTING DATA RATES TO PROVIDE UNIFORM BIT LOADING OF SUBCARRIERS OF A MULTICARRIER COMMUNICATION CHANNEL

Assignee: Intel Corporation

Page 2

Dkt: 884.B55US1 (INTEL)

Pursuant to 37 C.F.R. 1.98(a)(2), Applicant believes that copies of cited U.S. Patents and Published Applications are no longer required to be provided to the Office. Notification of this change was provided in the United States Patent and Trademark Office OG Notices dated October 12, 2004. Thus, Applicant has not included copies of any U.S. Patent or Published Applications cited with this submission. Should the Office require copies to be provided, Applicant respectfully requests that notice of such requirement be directed to Applicant's below-signed representative. Applicant acknowledges the requirement to submit copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).

The Examiner is invited to contact the Applicant's Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

ALEXANDER ALEXANDROVICH MALTSEV ET AL.

By their Representatives,

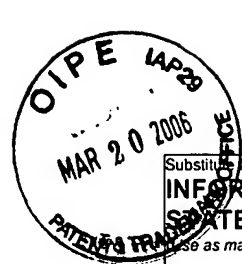
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
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Minneapolis, MN 55402  
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Date March 15, 2006 By Ann M. McCrackin  
Ann M. McCrackin  
Reg. No. 42,858

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 17th day of March, 2006.

JAMES KANYUSIK  
Name

[Signature]  
Signature



Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Application Number	10/815,035
Filing Date	March 30, 2004
First Named Inventor	Maltsev, Alexander
Group Art Unit	2631
Examiner Name	Unknown

Sheet 1 of 2

Attorney Docket No: 884.B55US1

**US PATENT DOCUMENTS**

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Filing Date If Appropriate
	US-2003/0043732A1	03/06/2003	Walton, J. R., et al.	06/26/2001
	US-2003/0083703A1	05/01/2003	Zhu, Q., et al.	10/25/2001
	US-2003/0204210A1	10/30/2003	Ousdigian, K. T., et al.	04/30/2002
	US-2003/0208241A1	11/06/2003	Bradley, K., et al.	05/02/2002
	US-2004/0258174A1	12/23/2004	Shao, L., et al.	02/26/2004
	US-2005/0031047A1	02/10/2005	Maltsev, A. A., et al.	12/16/2003
	US-2005/0141412A1	06/30/2005	Sadri, A. A., et al.	12/29/2003
	US-2005/0152466A1	07/14/2005	Maltsev, A. A., et al.	06/07/2004
	US-6,430,441	08/06/2002	Levine, P. A.	01/18/2000

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	T <sup>2</sup>
	EP-1240918A2	09/18/2002	Mouchawar, G. A., et al.	
	EP-1411647A2	04/21/2004	Liu, J.-T., et al.	
	GB-2384651	07/30/2003	Matsuoka, H., et al.	
	WO-03/047198A2	06/05/2003	Kadous, T., et al.	
	WO-2004/047354A1	06/03/2004	Jorswieck, E.	
	WO-2005/067171A1	07/21/2005	Sadri, A., et al.	
	WO-2005/071912A1	08/04/2005	Maltsev, A. S., et al.	

**OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		"Supplement to IEEE Standard for Information Technology- Telecommunications and Information Exchange Between Systems- Local and Metropolitan Area Networks - Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY)", <u>IEEE STD 802.11A-1999</u> , (December 30, 1999), c1-90	
		ABDUL AZIZ, M. K., et al., "Indoor Throughput and Range Improvements Using Standard Compliant AP Antenna Diversity in IEEE 802.11a and ETSI HIPERLAN/2", VTC 2001 Fall. <u>IEEE VTS 54th Vehicular Technology Conference</u> , 2001, Volume 4, (October 7-11, 2001), 2294-2298	
		BANGERTER, B., et al., "High-Throughput Wireless LAN Air Interface", <u>Intel® Technology Journal</u> , 7(3), <a href="http://developer.intel.com/technology/itj/index.htm">http://developer.intel.com/technology/itj/index.htm</a> , (August 19, 2003), 47-57	
		CHOI, B., et al., "Optimum Mode-Switching-Assisted Constant-Power Single- and Multicarrier Adaptive Modulation", <u>IEEE Transactions on Vehicular Technology</u> , 52(3), (May, 2003), 536-560	

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE          STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)	Complete if Known	
	Application Number	10/815,035
	Filing Date	March 30, 2004
	First Named Inventor	Maltsev, Alexander
	Group Art Unit	2631
	Examiner Name	Unknown
Sheet 2 of 2	Attorney Docket No: 884.B55US1	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		CIOFFI, JOHN M., "Chapter 4 - Multi-Channel Modulation", <u>Lectures on Digital Communications, Stanford University</u> , Available from <a href="http://www.stanford.edu/class/ee379c/">http://www.stanford.edu/class/ee379c/</a> , (2001), 278-314	
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		LEKE, A , et al., "A Maximum Rate Loading Algorithm for Discrete Multitone Modulation Systems", <u>GLOBECOM '97, Global Telecommunications Conference</u> , 1997, Volume 3, (November 8, 1997), 1514-1518	
		SANDHU, S., et al., "Analog Combining of Multiple Receive Antennas With OFDM", <u>IEEE International Conference on Communications</u> , (May., 11, 2003), 3428-3432	
		SIMOENS, S , et al., "Optimum Performance of Link Adaptation in HIPERLAN/2 Networks", <u>VTC 2001 Spring. IEEE VTS 53rd Vehicular Technology Conference</u> , 2001, Volume 2 of 4, (May 6-9, 2001), 1129-1133	
		SLIMANE, B. S., "A Low Complexity Antenna Diversity Receiver For OFDM Based Systems", <u>IEEE International Conference on Communications</u> , (Jun. 06, 2001), 1147-1151	
		TIAN, Q. , et al., "The Performance of Multi-Carrier CDMA with Base Station Antenna Arrays in fading channels", <u>Vehicular Technology Conference</u> , (May. 15, 2000), 1498-1502	
		YIH, C.-H. , et al., "Adaptive Modulation, Power Allocation and Control for OFDM Wireless Networks", <u>Personal, Indoor and Mobile Radio Communication</u> , 2, (2000), 809-813	
		YUAN, H. , et al., "An Adaptive Array Antenna with Path Selection of OFDM Signal", <u>European Personal Mobile Communications Conference</u> , (APR., 22, 2003), 412-416	
		ZHEN, L. , et al., "A Modified Sub-Optimum Adaptive Bit and Power Allocation Algorithm in Wideband OFDM System", <u>CCECE 2003 Canadian Conf. on Electrical and Computer Engineering</u> , Vol. 3 of 3, (May. 4, 2003), 1589-1592	

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

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